Report of the
Board of Regents

National Library of Medicine

Long Range Plan

U.S. Department of Health and Human Services
Public Health Service

Overview of the NLM Long Range Plan

Cover:

A system for quantitative DNA analysis using image processing

The NLM Long Range Plan is published as a series of 7 reports:

An *Executive Summary* sketches the background against which the Long Range Plan may be viewed, and it extracts highlights from the Board of Regents Report.

The *NLM Long Range Plan (Report of the Board of Regents)* presents detailed and specific recommendations and estimated resource requirements over the next 3 years for accomplishing the Library's long range goals.

Panel reports 1 through 5 contain the substance of the five advisory planning panels' discussion in each of the five principal domains of NLM activity:

Panel 1: Building and organizing the Library's collection

Panel 2: Locating and gaining access to medical and scientific literature

Panel 3: Obtaining factual information from data bases

Panel 4: Medical informatics

Panel 5: Assisting health professions education through information technology

Readers who wish further details should consult appropriate volumes in the series. Limited copies are obtainable from:

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January 1987

Foreword

It has been my privilege to serve on the Board of Regents of the National Library of Medicine (NLM) from 1982 to 1986. Succeeding Dr. Martin Cummings, Dr. Donald Lindberg began as the NLM Director in August 1984, the same month I began as Chairman of the Board of Regents. In our early informal talks together, Dr. Lindberg and I shared a belief in the importance of the NLM and the need for this great institution to prepare for its role in the changing scene of American medicine and science. The Library's distinguished history reflects its evolution as the world's greatest repository of biomedical information. Further, the Library staff has continually searched for ways to make its sources more available to scientists, clinicians and the public. Without question, the National Library of Medicine has become the intellectual center of the world's biomedical information network. To continue that role, some changes in mission and operations would be necessary.

In these early discussions, Dr. Lindberg and I agreed that the Library could best plan its future activities and resource requirements only after a careful examination of its mission and the requirements of its users. The new and different realities of the 21st century are coming into focus and changes to accommodate this new world are inevitable. At the direction of the Board of Regents a long range planning project was organized. It was presented to the Regents at the June 1985 meeting, and received their enthusiastic endorsement.

Consultants were identified, panels appointed, and the project launched in the Fall of 1985. The marvelous efforts of the panel members enabled each group to generate a report with recommendations. I believe that every user population was represented in the discussions held during the several meetings of the five panels and nothing overlooked in the long range plan.

This plan is intended to serve the public, the Congress, the HHS Secretary, future regents and the Director of NLM and staff in their decision making about the Library's future activities. Public and private financial support will be necessary to underwrite these enormously important functions. It is my hope that the plan and its interrelated component parts will be made known to the Secretary and the Congress and will help those leaders understand and appreciate the National Library of Medicine. Further, support from the private sector may be desirable for certain activities and the plan should help identify such areas.

In developing the plan, the Regents have been ably assisted by the Library staff and, particularly, its Director. The Board of Regents enthusiastically supports the plan and will help to encourage its successful implementation

L. Thompson Bowles, M.D., Ph.D.
Dean for Academic Affairs
Professor of Surgery
The George Washington University
Medical Center
Chair
Board of Regents
National Library of Medicine
1985–1986

Preface

The responsibility of the National Library of Medicine is to 'assist the advancement of medical and related sciences, and to aid in the dissemination and exchange of scientific and other information important to the progress of medicine and to the public health.' The Library had done this well in the past. Yet rapid changes in science, in health care practices, in the uses of information technology, and in American public policy concerning all these issues bring us pause to re-study how best to fulfill our responsibility during the coming decades.

This Report embodies a central challenge to the National Library of Medicine to strive to be certain that health care in America and the advancement of biomedical research toward this end will benefit from the dazzling technological discoveries that are available to us now from computer and information science, telecommunications engineering, physics and chemistry. In the past, the Library has established a distinguished record of scholarly leadership in medicine. This Report emphasizes the present urgent need for improved access by health care professionals and scientists to the fast growing scientific literature of newly discovered biomedical concepts, treatments, and preventatives—across a wide range of practical and theoretical problems. The most encouraging aspect of this Report is the recommendation that the Library move as quickly as possible to translate the existing "raw" technology of computers, information, and engineering sciences into products and services that through its insight and understanding of the special biomedical practices and needs can improve health care in America.

No one doubts that even finer developments await us in the coming years. Yet even today there exist outside of medicine, advanced systems for knowledge representation, country-wide inquiry and communication, and decision support for military, financial, industrial, and intelligence applications. What seems needed now is to adapt these general and useful technologies to the specific jobs of biomedicine. Progress might eventually come in any case, but a concerted effort on the part of the National Library of Medicine could speed this up, bringing laboratory advances and discoveries closer to the bedside and the clinic.

A word must be said about priorities among the current, the enhanced, and the new activities that this Report recommends. It does not prescribe a fixed sequence of steps by which the entire plan and all its objectives are to be accomplished. The construction of a functioning operational plan will be developed by NLM and its Board of Regents within resource limitations. This Report is more a map for the future and a set of opportunities that await NLM action and program development. The advisors and the Board of Regents are no doubt fully aware that the urgency of the need to support NLM's planned programs for the Nation's good must necessarily be balanced by the Congress and the Executive against all other needs for resources. In addition, many of the proposed programs are dependent upon full understanding and enthusiastic endorsement and support by the constituencies of the Library most affected.

Yet, the Report clearly recognizes several outstanding considerations. NLM's fundamental priority certainly is to sustain the collections of the Library and to provide better access; or, stated another way, to provide high quality library and information services to the biomedical community. Actions toward this goal include continued refinement of collections and preservation programs, improvements to the electronic system for end-user access, and modernization of our information support services.

The top priority for our discretionary efforts must be to prepare the Library and the Nation's health professionals for the optimal utilization of the burgeoning electronic technologies for knowledge management. Of the numerous initiatives the plan proposes as components of this preparation, one in particular stands out. This is the "window of opportunity" presented to the Library in the field of molecular biology and biotechnology. Attention to this opportunity—through the provision of advanced information handling services—will permit NLM to contribute significantly to discovery of new principles and treatments by health-care professionals and scientists.

As a direct result of the insight gained through the long range planning efforts embodied in this Report, NLM is already giving prime emphasis within the bounds of our current resources to research efforts to develop integrating and coordinating systems for the factual data bases in molecular biology/biotechnology. These efforts now involve a number of advanced techniques recommended in the Report, including extension of the Unified Medical Language System to molecular biology, interconnectivity of the existing data bases through electronic gateways and networks, and new knowledge representation designs.

I welcome the Report and its recommendations. On behalf of the National Library of Medicine staff, I wish to thank most sincerely all those who so graciously contributed their time, effort, and thoughts to this careful and salient statement.

Donald A.B. Lindberg, M.D.
Director, National Library of Medicine

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